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## RESEARCH COMMUNICATION

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# Seroprevalence of Hepatitis Virus B Seropositive in the Patients with Cholangiocarcinoma: a Summary

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### Abstract

The exact etiology of cholangiocarcinoma remains undetermined. One of the related risk factors for its development might be chronic viral hepatitis infection. Concerning hepatitis B infection, a correlation with cholangiocarcinoma has been documented. Here, we summarize knowledge on the prevalence of hepatitis B seropositivity among patients with cholangiocarcinomas. According to the literature review, five reports were recruited for further meta-analysis, covering 565 cases. The overall prevalence of seropositive cancer was 14.5 % (83/565). Further analysis revealed no correlation between prevalence rate and nationality of the studied population ( $P > 0.05$ ). Therefore, hepatitis B infection might be a contributing factor for cholangiocarcinoma development.

**Key Words:** hepatitis B - cholangiocarcinoma - seropositivity

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### Introduction

Cholangiocarcinoma, a malignancy of the hepatobiliary duct system, is a tumor that arises from the intrahepatic or extrahepatic biliary epithelium. The exact etiology of most bile duct cancers remains undetermined. This carcinoma is a common cancer among the people in the Southeast Asia, with the highest prevalence in northeastern Thailand and Laos (Kullavanijaya et al., 1999), where it is associated with liver fluke infection. Concerning the pathogenesis, it has been suggested that longstanding inflammation, cellular proliferation, and, ultimately, malignant transformation (Torok and Gores, 2001).

One of the relating risk for development of cholangiocarcinoma is chronic infection. Recently, hepatitis virus-associated chronic hepatitis or cirrhosis has been suggested to be involved in the pathogenesis of cholangiocarcinoma. Concerning hepatitis A, there have been no reports to my knowledge of any correlation infection and cholangiocarcinoma. Concerning hepatitis B infection, on the other hand, links to cholangiocarcinoma have in fact been documented (Pinyosophon and Wiwanitkit, 2002; Donato et al., 2001). In the present report, we summarize the available knowledge on the prevalence of hepatitis B seropositive among the patients with cholangiocarcinoma.

### Materials and Methods

A literature review was conducted to find previous reports about the prevalence of hepatitis B seropositivity among patients with cholangiocarcinomas. The author used the electronic search engine PubMed ([www.pubmed.com](http://www.pubmed.com)) in searching the literature. The available reports were also collected and extracted for data about the seroprevalence of viral hepatitis B. Those primary data were used for further meta-analysis study.

Concerning the meta-analysis study, the overall prevalence rate was calculated. Also, the association between seroprevalence rate and nationality of the populations was assessed using the Chi square test. SPSS 11.0 for Windows was used for statistical analysis in this study.

### Results

According to the literature review, 5 reports (Pinyosophon and Wiwanitkit, 2002; Donato et al., 2001; Liu et al., 2003; Guo et al., 2003; Han et al., 2001) were recruited for further meta-analysis (Table 1). According to the meta-analysis, 565 cases were studied. The overall prevalence of seropositive cancer was 14.5 % (83/565). Further analysis revealed no consistent correlation between the prevalence rate and the nationality of the studied population.

**Table 1. Previous Reports on the Seroprevalence of Viral Hepatitis B Among the Patients with Cholangiocarcinoma**

Items	Authors				
	Pinyosophon et al, 2004 [3]	Liu et al, 2003 [5]	Guo et al, 2002 [6]	Donato et al, 2000 [4]	Han et al, 2000 [7]
Nationality	Thai	Chinese	Chinese	Italian	Chinese
Number of cases	55	68	52	370	20
Positives	5	6	17	48	7
Seropositive rate (%)	9.1	8.8	32.7	13.0	35.0

## Discussion

Cholangiocarcinoma is the malignancy of the biliary duct system, originating in the liver and terminating at the ampulla of Vater. Recently, hepatitis virus-associated chronic hepatitis or cirrhosis has been suggested to be involved in the pathogenesis of cholangiocarcinoma (Pinyosophon and Wiwanitkit, 2002; Donato et al., 2001). Here, we retrospective analysed the prevalence of hepatitis B seropositive among patients with cholangiocarcinoma. According to the recent study of Donato et al (2001), HBV was proposed as a risk factor for cholangiocarcinoma. Similar findings are also described in Thai patients (Pinyosophon and Wiwanitkit, 2002), who demonstrated a relatively high rate of hepatitis B seropositivity among individuals with cholangiocarcinomas (Pinyosophon and Wiwanitkit, 2002). In addition, Liu et al (Liu et al., 2003) reported that HBV is correlated to the development of cholangiocarcinoma in the porta hepatis. They noted that tumors with HBC infection may have a higher malignancy biologically and a poorer prognosis (Liu et al., 2003).

According to this metaanalysis, the summative prevalence is about 15 %. In addition, the seroprevalence rate did not correlate with the nationality of the studied population. Therefore, hepatitis B infection might be a contributing factor for cholangiocarcinoma. Since both cholangiocarcinoma and viral hepatitis infection are common in many Asian countries (Kullavanijaya et al., 1999), vaccination for preventable viral hepatitis accompanied with serological screening among people in endemic areas is recommended.

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